

Patent Application No. 09/681,643

REMARKS

This Amendment is in response to the Office Action dated June 11, 2003. In the Office Action, Claims 1-10 were rejected under 35 USC §103. By this Amendment, Claim 1 is amended and Claims 11 and 12 are added. Currently pending claims 1-12 are believed allowable, with claim 1 being an independent claim.

CLAIM REJECTIONS UNDER 35 USC §103:

Claims 1-10 were rejected under 35 USC §103 as obvious over U.S. Patent No. 6,072,193 to Ohnuma et al. ("Ohnuma") in view of U.S. Patent No. 6,066,519 to Gardner et al. ("Gardner").

The present Application is directed to a fabrication process that involves depositing an oxide layer, such as SiO_x, onto the inner walls a processing chamber to prevent P-containing chemical species, such as phosphine (PH₃), from sticking to the chamber walls. Application, page 6, lines 17-20. According to one embodiment of the invention, coating the chamber inner walls is performed before P-doping, such as source and drain electrode doping, takes place. Application, page 9, line 28 - page 10, line 4. By introducing an oxide film on the inner walls of the processing chamber, contamination of the a-Si layer and the gate insulating film by P-containing chemicals subsequent to P-doping is reduced or eliminated. Application, page 9, lines 4-9. Thus, the present invention beneficially allows P-doping, the formation of an a-Si layer, and a gate insulating film to be carried out in a single processing chamber. Application, page 9, lines 9-13.

Claim 1 of the present Application recites, in part, "forming an oxide film on an inner wall of a CVD processing chamber . . . wherein forming the oxide film on the inner wall of the CVD processing chamber is performed before doping the source and drain electrodes with P." The Office Action states that Ohnuma fails to disclose forming an oxide film on the inner wall of a CVD processing chamber, but Gardner teaches such a limitation. See Office Action, paragraph 3. The Applicant respectfully disagrees with such an interpretation of Gardner.

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Gardner appears to disclose a fabricating chamber 200 for depositing an oxide layer on a semiconductor substrate 220. Gardner, col. 3, lines 21-22. The chamber includes a quartz showerhead 210 configured to outgas oxide 212 at lower temperatures than conventional oxide deposition chambers. Gardner, col. 3, lines 46-50 and 63-65. Gardner further discusses preparing such a chamber by removing any residual oxide on the showerhead and/or chamber walls. Gardner, col. 6, lines 8-13. Thus, it is respectfully submitted that Gardner teaches away from the present invention.

It is therefore respectfully submitted that Ohnuma and Gardner, either alone or in combination, fail to teach or suggest the limitations of Claim 1. For at least this reason, Claim 1 is believed to be allowable over the cited art.

Claims 2-12 are dependent on and further limit Claim 1. Since Claim 1 is believed allowable, Claims 2-12 are also believed allowable for at least the same reasons as Claim 1.

CLAIM AMENDMENTS:

Claim 1 is amended to recite, in part, "wherein forming the oxide film on the inner wall of the CVD processing chamber is performed before doping the source and drain electrodes with P." No new matter is believed to be introduced by this amendment, and support for this addition can be found at least on page 9, line 18 - page 10, line 2 of the Application.

Claims 11 and 12 are added by this Amendment. No new matter is believed to be introduced by these claims. Support for Claim 11 can be found at least on page 10, lines 14-16 of the Application. Support for Claim 12 can be found at least on page 7, lines 5-8 of the Application.

CONCLUSION


In view of the forgoing remarks, it is respectfully submitted that this case is now in condition for allowance and such action is respectfully requested. If any points remain at issue which the Examiner feels could best be resolved by a telephone interview, the Examiner is urged to contact the attorney below.

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No fee is believed due with this Amendment, however, should a fee be required please charge Deposit Account 50-0510. Should any extensions of time be required, please consider this a petition thereof and charge Deposit Account 50-0510 the required fee.

Respectfully submitted,

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